

MISSOURI CONSERVATIONIST

VOLUME 81, ISSUE 9, SEPTEMBER 2020
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Contents

SEPTEMBER 2020
VOLUME 81, ISSUE 9



FEATURES

10 What's Good for the Grouse

Restoration focuses on habitat,
which benefits several species.

by Larry Archer

17 R3

A strategy to recruit, retain, and
reactivate hunters, anglers,
and trappers benefits us all.

by Lauren Hildreth and Adam Doerhoff

22 History Calling

Successful restoration leads to
Missouri's first regulated elk hunt.

by Larry Archer

SPECIAL INSERT

2020-2021 Seedling Order Form



DEPARTMENTS

- 2 Inbox
- 3 Up Front With Sara Parker Pauley
- 4 Nature Lab
- 5 In Brief
- 28 Get Outside
- 30 Places To Go
- 32 Wild Guide
- 33 Outdoor Calendar



MISSOURI CONSERVATIONIST



ON THE COVER

Bull elk at Peck Ranch
Conservation Area

📷 **AARON HILDRETH**

70-300mm lens, f/4.8
1/160 sec, ISO 320

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Letters to the Editor

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BIG-EYED BEAUTIES

Thank you for this excellent article [*From Big-Eyed to Beautiful*, July, Page 10]. Noppadol Paothong is a great nature photographer, and now I learn, a writer, too.

Wesley Fordyce
Florissant

SPICEBUSH SWALLOWTAILS

Missouri is blessed to have so many talented writers and photographers contributing to the *Conservationist*, but special thanks for *From Big-Eyed to Beautiful*. Not only was the photography by Noppadol Paothong outstanding (as usual), the article was one of the most well-written and informative on the spicebush swallowtail caterpillar/butterfly that one could hope for. Noppadol is a special Missouri treasure whose love for his work really shows!

Ralph Luebke Overland

Kudos to Noppadol Paothong for an excellent article on spicebush swallowtail caterpillars and butterflies. I always enjoy his beautiful photographs and well-written articles. He skillfully weaves his personal experiences into the scientific facts and data he describes so well. I especially appreciated his conclusion to this article. He notes that nature requires lifetime learning, and he explains how we can all make a difference in the health of our natural world by planting a variety of host and nectar plants in our gardens for butterflies and other pollinators.

Ann Simmons Tanner Leawood, Kansas

DAMSELS AND DRAGONFLIES

I enjoyed your story featuring dragonflies and damselflies in the June issue [*Dragons and Damsels*, Page 22]. Very interesting coverage of the morphology, biology, and importance to humans. I rushed right to Google to check out the federally endangered Hine's emerald dragonfly. I was raised in Illinois and live in Oregon, but have received your publication for years. Absolutely stunning photography and informative articles. I've really enjoyed your most current change in format, as well. Many thanks for an awesome job done!

Mike Billman La Grande, Oregon

BEARS AND BREAKFAST

My grandson will be two in October. He gets the kids magazine [*Xplor*], but he loves the *Missouri Conservationist* issue with a picture of a black bear [*In Brief*, July, Page 5].

Rodger Benson via email



SALUTE FROM A VETERAN

I am a 91-year-old U.S. Army Korean War veteran. I will turn 92 in October of this year. Back in the early 1960s, I got my first *Missouri Conservationist* magazine. But, in my mind, I thought a magazine like this would never last. I read it from cover to cover. It was outstanding! This magazine has only gotten better and better. To this very day, the *Missouri Conservationist* magazine is, by far, one of the best out there. I have a feeling that this magazine will last on and on.

Robert Leird Malden

BETTER WITH AGE

I want to commend you on your fantastic *Missouri Conservationist* magazine. I liked the older versions, but the magazine has never been better. The stories are fascinating and the beautifully printed photos are magnificent. I often used to just look at the photos, but now it is a must read for me. It is one of the great services to Missourians — and it's free!

Thank you for enriching my life with your beautiful magazine. I may be too old now to walk on rough paths, but you bring them to me.

Paul Kjorlie St. Louis

CORRECTION

Stony Point Prairie Conservation Area is not located in Springfield as mentioned in *What Is It?* [August, Page 9]. It's in Dade County, 9 miles north and 3 miles west of Lockwood.

Connect With Us!



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on your Instagram photos.

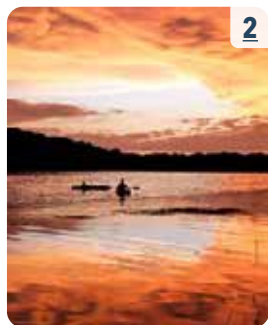


1

1 | Crane fly by Tim
VandenHoek, via Flickr

2 | Kayaking on
Elmwood Lake by
Matthew Wallace,
via email

3 | Bullfrog by
tankersleyphotography,
via Instagram



2



3

MISSOURI CONSERVATION COMMISSIONERS



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Up Front

with Sara Parker Pauley

✳ I recently sat down to, yet again, watch the 1971 classic film, *Willy Wonka & the Chocolate Factory*. It's a tale of the search for five golden tickets and the five lucky children who win a tour of a mysterious chocolate factory. We learn by the movie's end that Willy is really in search of someone to replace him as the factory's owner and caretaker, but only if he can find someone with the right heart — someone with a sense of imagination, yet humble and true. The story is complete when he finds such a heart in a young man named Charlie.

Just as recently, the department held a golden ticket competition of its own — the lottery draw for five hunters to participate in Missouri's first elk season in modern history. (See article on Page 22). I had the opportunity to correspond with all five winners, and witnessed their excitement as they learned they would participate in this inaugural hunt. Some shared they were avid elk hunters but excited to hunt in their own state, others talked of how they would prepare for the hunt, still others reflected on the significance of the hunt as part of Missouri's road to elk restoration. After hearing each of their stories, I was assured of this — they understood and appreciated this magical moment in Missouri conservation history and that a grand adventure awaits them this fall. Good luck to each of our inaugural elk hunters — we can't wait to hear how your stories unfold.

Sara Parker Pauley

SARA PARKER PAULEY, DIRECTOR
SARA.PAULEY@MDC.MO.GOV

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Printed with soy ink



mdc.mo.gov 3

Nature LAB

by Bonnie Chasteen

Each month, we highlight research MDC uses to improve fish, forest, and wildlife management.

WILDLIFE MANAGEMENT

Elk Ecology Study

✳ **How are Missouri's elk faring almost 10 years since restoration efforts began?** MDC, the University of Missouri, and the University of Montana started work to answer this question in 2016.

Conducted within Carter, Shannon, and Reynolds counties, the study estimated the herd's survival rates and site fidelity. "High site fidelity is a good indicator of available habitat quality," said MDC Cervid Biologist Aaron Hildreth.

"The elk herd has stayed within the area near the release sites," Hildreth added. He credited the many governmental and nongovernmental partners, including the Rocky Mountain Elk Foundation, the National Park Service, The Nature Conservancy, Pioneer Forest, and a dedicated group of private landowners who helped create quality habitat.

Researchers used radio collars to track the elk and collect data. The collars helped them determine habitat use, movements, and survival and reproductive



From left to right, study team members Ellen Pero, Colter Chitwood, Patrick Grunwald, and Braiden Quinlan examine a sedated, radio-collared cow elk to determine her pregnancy status. Shrouding protects the cow's eyes and helps keep her calm.

Four-year study of population dynamics, habitat use, and movement patterns enables managers to plan for restored herd's future needs and health

rates, which they used to model the population and help determine harvest quotas. "We learned that elk cow and calf survival rates have increased through time, which is great news as the population settles into the landscape," Hildreth said. "We have seen bull survival rates drop," he added. "This can be explained in part by some older bulls dying and a few younger bulls succumbing to parasites."

The study's results helped MDC determine when to offer Missouri's first regulated elk-hunting season. "In 2013, we set biological sideboards of 200 elk, 10 percent or greater annual population growth, and a ratio of at least 25 bulls per 100 cows before we would propose a hunting season," Hildreth said.

By June of this year, Missouri's elk herd had grown to an estimated population of 207, not including calves born this summer. "Given these numbers, we determined that we could sustain a very limited hunt this fall," Hildreth said.

Elk Study at a Glance

Methods

- Radio collaring
- Data modeling
- Aerial survey
- Pregnancy checking of yearling and adult cows

Current Population Statistics

- Herd size: 207
- Annual growth rate of 16%
- Bull:cow ratio of 39:100



Information Gained

"This study is a key piece that helps inform our model to track population changes through time." —MDC Cervid Biologist Aaron Hildreth

Cow and calf survival and adult reproduction rates increased

	2011-2014	2015-2018
Adult cow survival	0.91	0.96
Adult bull survival	0.94	0.79
Yearling cow survival	0.82	0.90
Yearling bull survival	0.91	0.88
Calf survival	0.45	0.67
Adult reproduction	0.63	0.82

In Brief

News and updates from MDC



CERVID CARCASS REGULATION CHANGES

NEW REGULATIONS
PART OF ONGOING
EFFORTS TO SLOW
THE SPREAD OF
CHRONIC WASTING
DISEASE (CWD)

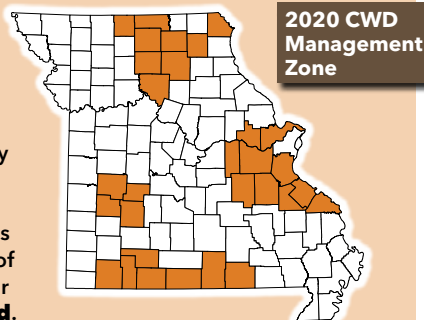
➔ MDC reminds hunters, meat processors, taxidermists, and others of new regulations now in effect regarding transporting deer, elk, and other cervid carcasses into Missouri and within the state. Meat processors and taxidermists are also reminded of new regulations regarding cervid carcass disposal.

The new regulations, printed in the *Wildlife Code of Missouri*, affects deer, elk, and other members of the deer family, called cervids.

"Many states with CWD have implemented similar restrictions on carcass movement," said MDC Wildlife Health Program Supervisor Jasmine Batten. "The detection of CWD in several new areas of the state over the past few years is very concerning, and these regulation changes aim to further slow its spread. The vast majority of deer in Missouri are CWD-free today, and we want to keep it that way!"

continued on Page 6 »

CWD is a deadly disease in white-tailed deer and other members of the deer family, called cervids. The disease has no vaccine or cure and eventually kills all cervids it infects. The infectious prions that cause CWD are most concentrated in the spines and heads of cervids. Moving potentially infected cervid carcasses out of the immediate areas where they were harvested and improperly disposing of them can spread the disease. MDC has established a CWD Management Zone consisting of counties in or near where CWD has been found. For more information on CWD, visit mdc.mo.gov/cwd.



CERVID CARCASS REGULATION CHANGES *(continued)*

Regulation changes for hunters who harvest deer in Missouri from a CWD Management Zone county are:

- Deer harvested in CWD Management Zone counties must be Telechecked before any parts of the carcass may be transported out of the county of harvest.
- Whole carcasses and heads of deer harvested in CWD Management Zone counties may only be transported out of the county of harvest if the carcass is delivered to a licensed meat processor and/or taxidermist within 48 hours of exiting the county of harvest.

Regulation changes for hunters bringing deer and other cervids into Missouri from another state are:

- Hunters may no longer transport whole cervid carcasses into the state.
- Heads from cervids with the cape attached and no more than 6 inches of neck in place may be brought into Missouri only if they are delivered to a taxidermist within 48 hours of entering Missouri.
- There is no longer a requirement that cervid carcass parts coming into the state be reported to the MDC carcass transport hotline.

Regulation changes for taxidermists and meat processors are:

- Taxidermists and meat processors throughout the state are required to dispose of deer, elk, and other cervid parts not returned to customers in a sanitary landfill or transfer station permitted by the Missouri Department of Natural Resources.
- Proof of disposal must be retained for 12 months for meat processors and for three years for taxidermists.

Most deer hunters should not be affected by the new regulations and most meat processors and taxidermists are already properly disposing of deer carcasses.

"Our deer hunter surveys show that at least 85 percent of deer hunters are not likely to be affected by the new regulations because they already dispose of carcasses on the property where the deer was harvested, on a property in the same county, or already take their harvested deer to licensed meat processors and taxidermists," Batten explained.

Get more information on the regulation changes and other CWD information for fall deer hunting — including a map of the CWD Management Zone — from our *2020 Fall Deer*

The following carcass parts may be moved outside of the county of harvest without restriction:

- Meat that is cut and wrapped or that has been boned out.
- Quarters or other portions of meat with no part of the spinal column or head attached.
- Hides from which all excess tissue has been removed.
- Antlers or antlers attached to skull plates or skulls cleaned of all muscle and brain tissue.
- Upper canine teeth.
- Finished taxidermy products.

The following cervid parts can be transported into Missouri without restriction:

- Meat that is cut and wrapped or that has been boned out.
- Quarters or other portions of meat with no part of the spinal column or head attached.
- Hides from which all excess tissue has been removed.
- Antlers or antlers attached to skull plates or skulls cleaned of all muscle and brain tissue.
- Upper canine teeth.
- Finished taxidermy products.

and Turkey Hunting Regulations & Information booklet, available where permits are sold and online at short.mdc.mo.gov/ZgS.

For more information on field dressing harvested deer using the "gutless method," watch this MDC video at youtu.be/m6Px0wOHxk.

MDC will again offer statewide voluntary CWD sampling and testing of harvested deer during the entire deer season at select locations. MDC will also conduct mandatory CWD sampling for hunters who harvest deer in counties of the CWD Management Zone Nov. 14–15. Any changes to mandatory sampling requirements due to the ongoing COVID-19 pandemic will be posted at mdc.mo.gov/cwd and be available from MDC regional offices.

Ask MDC

Got a Question for Ask MDC?

Send it to AskMDC@mdc.mo.gov or call 573-522-4115, ext. 3848.

Q: Is this an immature male hummingbird?

→ Good call! Yes, this is a juvenile male ruby-throated hummingbird.

You can tell this is a male by the tiny red feathers of his iridescent gorget, the flashy patch of color found on the throats of male ruby-throated hummingbirds. You can tell it is a juvenile because an adult male would have complete adult plumage, including the full gorget. Both females and juvenile males have white tips on their retrices, or tail feathers; adult males do not have these white tips. Another telling characteristic is the deeply forked tail. Females have a shallower tail fork.



Juvenile male
ruby-throated
hummingbird

HUMMINGBIRD: LAURA LEWIS; BLUEGILL NEST: DEBBIE VESSELS



Bluegill nest



Bluegill

Q: What kind of fish do you think did this? As I was having my quiet time, I enjoyed watching this take place.

➔ This is likely the nest of a bluegill, a member of the sunfish family. Bluegill are prolific breeders and normally spawn in late spring and early summer when water temperatures rise to 70 to 75 degrees. A male bluegill will sweep or fan out a shallow, dish-shaped nest. Once established, these fish aggressively defend their nests against intruders, guarding them until the eggs hatch; after that, the fry are on their own. By age 3 or 4, most Missouri bluegill have grown to about 6 inches in length.

Bluegill have an interesting breeding behavior: Certain non-nesting males, called "sneakers" or "satellites," have the color pattern and behavior of females; they enter other males' nest areas and fertilize eggs without alerting the territorial-nest-holding male.

When not on the nest, these gregarious fish often swim in loose groups of 20 to 30; at midday, they move to deeper water or shady spots. In mornings and evenings, they feed in the shallows.

To see a bluegill at work, visit short.mdc.mo.gov/ZB5.

What IS it?

Can you guess this month's natural wonder?

The answer is on Page 9.



Corporal Tammy Cornine

RAY COUNTY
CONSERVATION AGENT

offers this month's

AGENT ADVICE

If you've ever wanted to wade into waterfowl hunting, teal season is a good time to start. With opening day Sept. 12, teal season starts during a warmer time of the year. Milder weather conditions mean less investment in gear, so you can get started with just mud boots or hip waders and decoys. Teal season opens at sunrise and closes at sunset. The advantage of full sunlight allows hunters to properly identify what they are harvesting. The limit is six teal per day, 18 in possession. You must have a Small Game Permit, Migratory Bird Hunting Permit, and a Federal Duck Stamp.

FOR MORE INFORMATION, VISIT
SHORT.MDC.MO.GOV/Z8B.

WE ARE CONSERVATION

Spotlight on
people and partners

by Larry Archer

Dave Haubein

➔ From early adoption of no-till planting to being Missouri's first Audubon Conservation Rancher, Dave Haubein believes he's producing more than row crops and cattle. With his wife, Tanya, he's also producing clean water, healthy soil, and wildlife habitat on the 4,600 acres he owns or manages near Lockwood in southwest Missouri.

"I like to use the term good conservation ethic because I think it is ethical to restore things the way they should be," he said.

Cover crops and native grasses

Haubein, the fifth generation of his family to work this land, was also on the forefront of planting cover crops to promote soil health in his row crop fields and converting previous fescue fields to native grasses.

"We use cover crops on as much of our property as we can plant after the row crops are done," he said. "The conversion to the native grasses and the cover crops not only help the soil health, they're tremendously beneficial to wildlife."

In their own words

This conservation ethic has attracted more than wildlife; it also attracted Ann and Brady Owen, his daughter and son-in-law, back to the Midwest from the West Coast to be a part of the operation.

"They're really taking pride in what we're doing," he said. "It's meaning something to them, and that means a lot to me that they're into what we're doing."

by Cliff White



Tanya and Dave Haubein, along with their daughter and son-in-law Ann and Brady Owen, employ conservation practices on the 4,600 acres they own or manage in southwest Missouri.

What's **your** conservation superpower?

CHANGES TO WATERFOWL MANAGED HUNTS

The 2020–2021 waterfowl managed hunt process has been modified to assure the safety of hunters and staff during the COVID-19 pandemic. MDC is committed to providing hunting opportunities on managed waterfowl hunting areas throughout the waterfowl season. To allow for flexibility to respond to the state of the pandemic, there will be no pre-season reservations for the 2020–2021 waterfowl season. There will also be no teal season or youth season morning drawings. Procedures for individual conservation areas will be posted on the MDC website closer to season.

All reservations, including ADA blinds, will be allocated through the weekly in-season reservation draw. The first application period will open Oct. 20 and results will be announced Oct. 27. The weekly application period opens every Tuesday at 8 a.m. and closes the following Monday at 3 p.m.

Throughout the season, hunters will be asked to follow precautionary guidelines to assure the safety of everyone at the site during the morning draw. There will be a sliding scale of procedural levels that could range from no staff-hunter contact at all to close to business as usual. At the start of the season, every conservation area will be assigned to a certain procedural level due to the status of COVID-19 in the county. The decisions will be made in consultation with the appropriate county health department. Throughout the season, an area could move to a more restrictive procedural level depending on the county health department or other COVID-19 related factors.

Throughout the season, procedures could change with limited time to notify hunters. In order to receive updates as quickly as possible, subscribe to the "Waterfowl" email update list at mdc.mo.gov/subscribe. Interested hunters can also refer to the MDC website as information is available, at short.mdc.mo.gov/ZXx.



There will be no morning draw for this year's teal season due to the COVID-19 pandemic.

While this process means a significant change from what hunters are used to, MDC has no plans to make the changes permanent. MDC has designated staff at the numbers below to help answer any questions hunters may have about the changes to this year's waterfowl season:

Statewide

- Lauren Hildreth
573-522-4115, ext. 3259
- Joel Porath
573-522-4115, ext. 3188

Middle Zone

- Luke Wehmhoff
573-624-5821, ext. 4662
- Gary Calvert
636-441-4554, ext. 4180

North Zone

- Chris Freeman 660-646-6122
- Craig Crisler 660-446-3371
- Mike Flaspohler 573-248-2530

South Zone

- Lauren Hildreth
573-522-4115, ext. 3259

WHAT IS IT?

BLUE DASHER DRAGONFLY EYES

Male blue dashers (*Pachydiplax longipennis*) have beautiful turquoise eyes, accentuated by the species' characteristic pure white face. Relative to their body size, dragonflies have some of the largest eyes in the animal kingdom. Made up of nearly 30,000 optical units, or facets, called ommatidia, their eyes can detect the slightest movement in all directions simultaneously, making them deadly hunters. Blue dashers hunt mosquitoes, midges, gnats, and other tiny flying insects.



A ruffed grouse perched on a fallen log assesses his surroundings before starting his drumming display.



What's Good for the Grouse

RESTORATION FOCUSES ON
HABITAT, WHICH BENEFITS
SEVERAL SPECIES

by Larry Archer

This clutch of 13 ruffed grouse eggs were laid in a shallow depression of leaves on the forest floor with a few downy feathers lining the nest bowl for insulation.



It's sunset in late August in north-central Wisconsin's Iron County, and MDC Private Land Conservationists Nate Mechlin and Richard

Temple arrive to check their last trap of the evening. Up to this point, tonight's run has been a shut-out, but that ends with the discovery of two juvenile ruffed grouse — one male and one female — in the trap.

Approaching the trap quietly, Mechlin and Temple work quickly to cut the zip ties holding the top in place and remove the birds one at a time, placing them in small, ventilated cardboard boxes.

"It's critical that we do everything we can to reduce stress on the birds," Mechlin said. "In this case, we minimize stress by being really quiet, going in there grabbing the birds quickly, and getting them into the holding boxes right away."



Accidental Pioneers

In that moment, those two grouse, subsequently designated #147 and #148, went from being just two of hundreds of thousands to being two of only 300 birds captured over a three-year period for relocation to Missouri as part of an effort to re-establish a ruffed grouse population here — a type of accidental pioneer.

During the months of August and September in 2018 and 2019, MDC staff captured 100 ruffed grouse each year for relocation to the Daniel Boone and Little Lost Creek conservation areas in a part of east-central Missouri known as the Missouri River Hills Region, an area that includes counties along the Missouri River from Jefferson City to St. Louis. Work to capture and move the final group of 100 birds was postponed until August and September of 2021 due to the COVID-19 pandemic.

A ground-feeding, heavy-bodied, chicken-like bird of the same scientific order as the turkey, quail, greater prairie-chicken, and pheasant, the ruffed grouse was once common in Missouri. Their one-time value as a game species and the distinct sound of the male's mating ritual wing beating — known as "drumming" — makes it an iconic species, said



A young male ruffed grouse, who was relocated to Daniel Boone CA from northern Wisconsin, shows off his aluminum leg band.



Ruffed grouse require young forests with densely growing trees to help them hide from predators. This early successional forest is the result of ruffed grouse habitat restoration efforts on Daniel Boone CA.

MDC Resource Scientist Reina Tyl, ruffed grouse program leader.

“Ruffed grouse are a native species here in Missouri that I think just hold a lot of value for people,” she said. “They really like to see them out in the forest and hear them in the springtime drumming.”

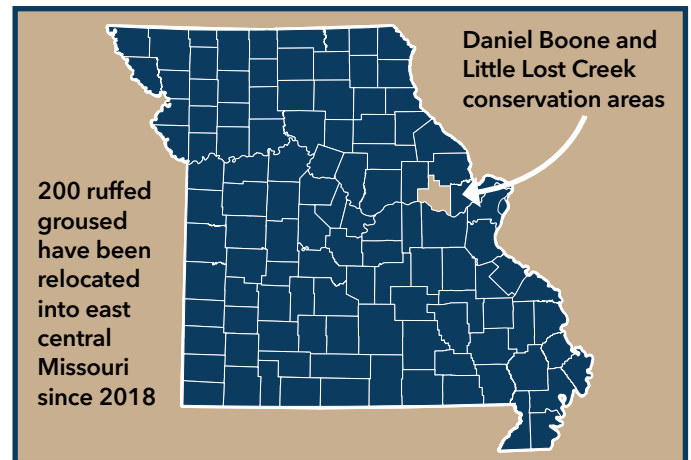
The 20th century saw the grouse population ebb and flow. Despite several attempts to stabilize and restore the ruffed grouse population by bringing in birds from other states, populations have been trending downward for several decades, according to MDC Cervid Program Supervisor Jason Isabelle, who preceded Tyl as ruffed grouse program leader.

“Quite a few of those releases were deemed successful initially, but over time, populations in those areas slowly declined until the birds were gone,” Isabelle said. “Some persisted longer than others, and really, the last area that we would call a stronghold was in this area where we’re trying again now.”

Habitat Specialists

As the decline continued and wildlife managers recognized the inevitability of a grouse-less Missouri, discussions began on how to address the issue, considering the history of previous efforts. A 2011–2013 study determined that another reintroduction attempt required habitat restoration. Grouse require early successional forest habitat — forest that is less than 25 years old — to thrive, Isabelle said.

“Grouse are unique in that they have a very well-defined niche as far as suitable habitat is concerned,” he said. “They’re not a generalist; they are a specialist. Whereas turkeys and deer will do well just about anywhere, grouse need young forests that are five to 20 years old, and if you don’t have that age class of forest, you don’t have grouse.”



And while most people associate habitat loss with human activity, such as urban spread and development, the habitat loss that affects the ruffed grouse is caused by human inactivity, Tyl explained.

“We use the term forest maturation, that was the main source of their habitat loss,” she said. “It wasn’t that those forests are no longer forests, it’s just that there became this public perception that cutting trees is bad.”

Early successional forest habitat — characterized by the growth of thick underbrush and young trees that begins after a portion of the forest is cleared, whether by harvest or a natural event like fire or storm — offers grouse both food and shelter missing from a fully mature forest.

“Some species can do okay without it, but there’s some that can’t, and the ruffed grouse is one of those that just will not be able to thrive without that habitat,” she said.

The Long Trip South

Scratching about for insects that August afternoon, the ruffed grouse designated as #147 and #148 encounter a chicken-wire fence roughly 2 feet tall and 50 feet long. Short enough to easily fly over, these two do what comes natural to a ground-dwelling species — they go around. Instead of circumventing the obstacle, they find themselves caught in a funnel trap.

Once trapped, the birds enter a process that is designed to minimize the stress of being relocated, said MDC Resource Scientist Reina Tyl, ruffed grouse program leader.

"We understand we're putting these birds through a lot, right?" Tyl said. "We're expecting a lot of them — to uproot them from where they are and move them to a completely unfamiliar place — and so that's why we put so much thought into how can we make this the best possible, least stressful experience for them."

From the trap site, the birds are taken to MDC's operations center — a Wisconsin Department of Natural Resources (WDNR) facility an hour away in Price County — for processing by MDC State Wildlife Veterinarian Dr. Sherri Russell. With WDNR veterinarian Dr. Lindsey Long, the pair devised a medical evaluation and treatment regimen to ensure the birds arrive in Missouri healthy.

"You have to look to make sure that, one, they are healthy and able to withstand the trip," Russell said. "And then, two, we're trying to make sure that we don't bring any kind of disease to Missouri from Wisconsin."

Each bird is anesthetized and given a quick physical. Birds that are healthy enough to make the trip — like #147 and #148 — have a blood sample taken to test for West Nile virus, and they are weighed, sexed, treated for ticks, and injected with warm fluids.

Grouse attempting to move around the chicken-wire fencing, find themselves instead caught in a funnel trap.



Once removed from the trap, the grouse are placed in ventilated boxes for transfer to the processing center and eventually to Missouri.



Once the birds arrive at the processing center, they are removed from the box, anesthetized, examined, treated, returned to the box, and kept in a dark, quiet room to await their trip.

"We give them warm fluids under the skin so they will arrive hydrated," she said. "They aren't going to eat and drink on their way; this way they have the fluids, and we're assuming that when they get to their new home, it'll take them a little while to orient and find fluids."

"It's like a warm, cozy cup of tea for the birds before they travel," she said. "That's how I think of it, anyway."

Tyl credits Russell's and Long's work with the high survival rates of birds from capture to release.

"We haven't had a single bird die during transport," she said. "To have that sort of success for something that is so potentially stressful, really, we owe a lot of that to the vets because they came up with this processing protocol, and they're the ones who advised the transportation protocol and how we should go through that process."

Once #147 and #148 — along with the other eight birds captured this day — are processed, they are returned to their boxes and loaded into the waiting van for the overnight trip to Missouri. At 10 p.m., drivers Terry Bertholomey, an MDC outdoor education center manager, and Tony Spicci, an MDC geographic information system supervisor, begin the long, cool, quiet overnight drive.

"We provide very specific instructions to the transporters to keep the vehicle temperature cool and quiet, and the idea behind that is just to reduce any sort of stress to these birds," Tyl said.

Such driving conditions, including no talking and no radio, make the roughly 10-hour trip challenging, Bertholomey said.

"The biggest problem was really just staying awake, because, you know, it's quiet, you're not talking, there's not much going on, and the birds didn't make a sound," he said.

About an hour from their destination, the transporters text Daniel Boone Conservation Area Manager Jeff Bakameyer, who escorts them to the release site about



Medical evaluation

9 a.m. As a reward for the overnight bird delivery, Bertholomey and Spicci participate in the release, but the challenging drive is followed by a challenging hike, Spicci said.

"It's not like you just drive into a parking lot, open the doors and let the birds go," he said. "It's a predetermined spot, and it's off road quite a bit. You're also releasing them a distance from where the actual vehicles are into an area – and they've kind of got it set up so the birds will release away from where we are and not get harmed."

Just as with every other leg of the journey, the final and shortest leg for #147 and #148 is taken with care, even as it becomes a little more difficult on foot, he said.

"It's a very delicate transport," he said. "You have to be very careful, and of course, where our release site is, there's some poison ivy here, a tree to step over there, and so you're doing this very delicate walk to where they want you to release the birds."

And while the other birds come out of their boxes at different speeds and levels of enthusiasm — ranging from staying nearby to not wanting to leave the box at all — #147 and #148, released together because they were captured together, explode out of the box, flying to the nearby woods, which is the best sign of how they handled the trip, Tyl said.

"When we see them just take off like that, it's them saying, 'I'm healthy; I'm good to go; I just spent all night resting in a box, and I'm ready to get out of here,'" she said.



Released into new habitat



A Long-Term Plan

But one of the findings of the 2011–2013 study was that the Missouri River Hills Region, which includes Little Lost Creek and Daniel Boone conservation areas, had insufficient early successional forest habitat to sustain a reintroduced grouse population. Any restoration effort would require extensive habitat work at these two conservation areas, Isabelle said.

"We recognized that those two areas were going to be our core if we're going to restore grouse," he said. "Those two areas are not that far apart, and they're decent size areas, which affects how much habitat can be created."

Preparing the areas for a new grouse population required revamped area management plans and several years of habitat restoration, said Little Lost Creek and Daniel Boone conservation areas Manager Jeff Bakameyer.

"It was a long-term effort getting prepared for them," Bakameyer said. "What we've tried to shoot for — for Little Lost Creek and Daniel Boone — is around 20 to maybe 25 percent of the area being in that early successional forest habitat at any one time."

"And over the years they just disappeared."

—Bill Haag, Missouri landowner

'Critter Carrying Capacity'

Even rolling out the habitat version of the red carpet at area conservation areas is not enough without the cooperation of surrounding landowners, Tyl said.

"There are quite a few landowners in that area who are really great cooperators and have done a lot of really good habitat work because grouse mean a lot to them," she said. "Some of their families have lived there for probably a hundred years, so they have a lot of interest in the success of this effort, and they're willing to do the work."

Landowners Bill and Margie Haag purchased 1,450 acres of primarily hardwood forest just west of Daniel Boone CA in 1997.

"We had grouse when we first bought it, and the population was obviously fading at that point," Haag said. "And over the years they just disappeared."

Almost immediately, Haag set about working with MDC private land conservationists to improve what he called the "critter carrying capacity" of the property. That effort led to participation with fellow landowners in the Ruffed Grouse Chapter of Quail and Upland Wildlife Federation. He estimated that combined, chapter members have created 10,000 acres of grouse habitat in the region.

"You band together 80–100 landowners and you're doing some stuff on a landscape scale, and that's what it has to be," he said. "You can't have a hundred acres of good habitat as an island in a sea of nothing."

As the host of the annual A Day with Grouse event, Haag takes other landowners and interested visitors on a tour of parts of his property in different states of regrowth, explaining the importance of forest management on wildlife.

"In essence, what I always tell people is that creating good habitat is like taking care of a big vegetable garden, the worst thing you can do — that any property owner can do — is nothing," he said. "It needs to be managed."



Flagship Species ... and More

Converting thousands of acres of forestland to early successional forest habitat isn't quick or easy — and it doesn't only benefit grouse, Bakameyer said.

"It's definitely not one of those things that you do and then walk away from," he said. "It is a tremendous amount of effort — and we tie it to this one species, to ruffed grouse, because they're kind of the flagship species ... but there's a lot of other species that just aren't as well known, different Neotropical migrant bird species and others that this sort of habitat is a critical need for them, too."

Haag has seen how the creation of early successional forest habitat improves the "critter carrying capacity" of his property, including an increase in species beyond grouse.

"Our songbird population has just exploded since we've been doing a lot of this stuff," he said. "We're seeing stuff I never saw before, stuff like scarlet tanagers."

And while many species prosper in this habitat, Haag recognizes its importance if grouse are to make the desired rebound in Missouri.

"When we bring these birds from Wisconsin, we want them to have the best, most welcoming chance for survival — and prosper and multiply — that we can offer." ▲

Larry Archer is the associate editor of Missouri Conservationist and participated in the first season of the grouse relocation project as a trapper.



R3

A STRATEGY TO
RECRUIT, RETAIN,
AND REACTIVATE
HUNTERS, ANGLERS,
AND TRAPPERS
BENEFITS US ALL

**by Lauren Hildreth
and Adam Doerhoff**

Mentoring a new
hunter or a youth
hunter is important to
the future of hunting.
Read on to learn more.

**PHOTOGRAPH BY
DAVID STONNER**

When Michael Gortmaker, 15, approaches the shooting line at his Missouri National Archery in the Schools (MoNASP) competitions, he is one of many archers from Columbia's Gentry Middle School. As he establishes his stance, draws the bowstring and aims, the other archers, coaches, and spectators melt away. His focus is on his arrow and the nearly 5-inch yellow circle 15 meters away.

"One thing I really like about MoNASP is that you have to learn how to focus — to keep everything else out of your mind," said the third-year MoNASP team member. "It's a good sport for that."

While MoNASP's purpose is to aid students through the development of a lifetime sport, it also plays a role in an even bigger effort — the recruitment of new hunters and anglers.

The 3 R's

Even the recruitment of new hunters and anglers isn't a standalone effort, but part of a comprehensive nationwide campaign known as R3 — recruit, retain, reactivate. To stabilize the number of hunters and anglers afield, conservation agencies and outdoor organizations nationwide have embraced the concept of recruiting new hunters, retaining active hunters, and reactivating previously active hunters who have since left the field.

The R3 campaign is driven by the decline in the number of active hunters and anglers afield. The aging of the post-war baby-boom generation, the shift from a rural to urban population, the disruption of the generational hunting and fishing tradition, and the increased competition for people's time have all contributed to this decline.

But even as the number of hunters and anglers decline, the number of people involved in "non-consumptive" outdoor activities (kayaking, bird-watching, hiking, photography, etc.) has been on the rise. While the two types of activities seem to be distinctly different — and at times oppositional — the decline in hunters and anglers should be of concern to all who enjoy the outdoors.

As consumptive activities, hunting and fishing require permits, while



non-consumptive activities are typically void of permit costs. While everyone in Missouri pays the one-eighth of one percent conservation sales tax, hunting and fishing permits provide an additional source of important revenue. The federal Pittman-Robertson and Dingell-Johnson acts place an excise tax on hunting and fishing equipment. Combined, these taxes paid by hunters and anglers support much of the habitat work and many of the programs enjoyed by non-consumptive outdoor enthusiasts.

In addition to supporting conservation efforts through permit fees and taxes, consumptive outdoor enthusiasts play another role — substitute predator. With most of Missouri's pre-settlement large predators, such as wolves and cougars, gone from the landscape in any significant number, hunters and anglers play a role in controlling wildlife populations through scientifically regulated harvests. Maintaining wildlife populations decreases unwelcome human-wildlife encounters and prevents overpopulation-related issues, such as death from starvation and disease.

More than MoNASP

While new hunter and angler recruitment is ancillary to MoNASP's primary mission, many MDC programs are developed specifically to introduce non-hunters and non-anglers to consumptive sports. MDC's Discover Nature — Fishing includes events that provide first-time anglers with the equipment and instruction needed to start the fishing tradition. Because men and boys have been traditionally inclined toward hunting and fishing, other Discover Nature programs focus on connecting families, girls, and women with the outdoors and consumptive sports.

But having the skills and instruction doesn't always result in a hunter or angler in the field. To help bridge the transition, MDC offers mentored hunts — pairing new youth or adult hunters with experienced volunteers — and specific youth-only seasons for deer and turkey, usually in advance of the regular season, to give youth an opportunity to hunt without the pressure of competing with more experienced hunters.



Because of his involvement in MoNASP, Michael Gortmaker was curious about bowhunting and bowfishing. His archery skills helped aid this transition, and a lifelong passion for the outdoors had begun.



Furbearers and Facebook

Marijane “MJ” Williams, 31, Ashland, grew up in the outdoors. When she was about 10, her mom would drive her out to the woods, but she had to keep her passion for the outdoors alive on her own. She raised dogs to go hunt raccoons, started bowhunting around 19 years old, tried her hand at turkey hunting, and eventually became interested in trapping.

“I was helping a guy butcher hogs, and he had a bunch of traps hanging on the wall,” Williams said. “That piqued my interest. He gave me some pointers, and I was so excited to get out.”

However, those pointers weren’t quite enough. She gave up on trapping, but couldn’t get it out of her head. Williams found some traps online and cobbled together the supplies to start trapping again. Through social media, Williams found a Facebook page of Missouri trappers. After two seasons of trapping, with limited success, she spent a year improving her gear and diving into researching trapping. Even though she did her research and tried to improve her trapping skills, this Facebook group changed how she looked at trapping.

“I made contacts and learned to ask the right questions,” she said. “I would watch multiple YouTube videos on a topic and see what was common to them all.”

Trapping also changed her perspective with pursuing deer, turkey, and other game. “As a trapper, you have to be aware of everything,” she said. “Trapping has made me a better hunter all around, and I’m a far better scouter than I was before.”



The tools to help you enjoy the outdoors are all around you. A little determination unlocked a seemingly endless world of opportunities for M.J. Williams.



Social media, namely Facebook and YouTube, are key to Williams' continued involvement in trapping. She is also trying to raise the next generation of outdoors lovers — she takes her daughter out hunting and trapping.

Much of what Williams did to grow and maintain her interest in trapping was self-directed through social media, and MDC also reaches out to hunters and anglers via social media to keep them up on the latest news concerning seasons, regulations, and special hunting and fishing opportunities. The same technology that Williams used to connect with other trappers — which is often an obstacle to getting and keeping people outdoors — is being used by MDC to streamline the administrative side of hunting and fishing. Permits can be bought online anywhere, and deer and turkey can be Telechecked the same way. The MO Hunting, MO Fishing, and MO Outdoors apps make renewing permits, finding local hunting and fishing spots, and staying informed on seasons, methods, and limits easier than ever.

Dall Sheep and Crossbows

Many of the baby-boom generation, most of whom range in age from their early 60s to their mid-to-late 70s, have retired both from the workplace and from many of the activities they previously enjoyed, including hunting and fishing. Nationally, the rate of replacement with new hunters and anglers is not keeping pace with this, which means bringing former hunters and anglers out of "retirement" is an important part of R3.

Dr. Richard Kies, 69, Cape Girardeau, grew up in Jackson, where his dad and grandfather quail hunted, but he was never

serious about firearm hunting. His family had a cabin on the Current River in the 1960s, a time when seeing a wild turkey was a "big deal." In college, Dr. Kies hunted goose, duck, and quail but eventually life got in the way and hunting took a back seat. Through a family friend, Dr. Kies was introduced to the idea of hunting Dall sheep — a mountain-dwelling species of sheep inhabiting western Canada and Alaska. His spark for hunting was reignited.

"The gateway to my hunts around the world was deer hunting," he said. "I bought some land here in Missouri, and a friend taught me to shoot and hunt."

Dr. Kies hunted many different species on his farm and around the world, which eventually led to picking up archery about 15 years ago.

"I used a compound bow," he said. "But around 2007–2008 my shoulder got to the point I couldn't lift my arm. I had to sell my compound bow."

That bad shoulder and an eventual wrist injury forced Dr. Kies to hang up his bow — until the crossbow became an option.

"Without the crossbow, I wouldn't be out there," he said.

Dr. Kies is not alone. As someone whose time as a bowhunter was brought to an end by too much wear and tear on the shoulder — or similar injury — he is not the only one to return to the field because of the option of using a crossbow.

Legalizing the crossbow as a means of hunting, which was approved by the Missouri Conservation Commission in 2016, is another example of adapting hunting and fishing regulations



Dr. Kies missed not being afield as much as he desired, but that has since changed. R3 seeks to remove as many obstacles to hunting as possible through evolving regulations.

to encourage more people to start, continue, or return to hunting and fishing, while continuing to protect Missouri's fish and wildlife resources. Seasons, methods, and limits are constantly evolving to provide the most user-friendly environment for the resource user with respect to other factors.

From MoNASP to Mentor

Michael Gortmaker has built relationships with his MoNASP teammates. Those friendships extend beyond just practice, and Michael often offers to take friends bowfishing. He already sees the importance of mentoring others with outdoor skills.

In the future, Michael wants to branch out, maybe even go on an elk hunt. He also wants to continue with MoNASP in high school, with its potential for scholarships. And his entrance into hunting and bowfishing — paved by his participation in MoNASP — has grown with an enthusiasm that portends a lifetime afield.

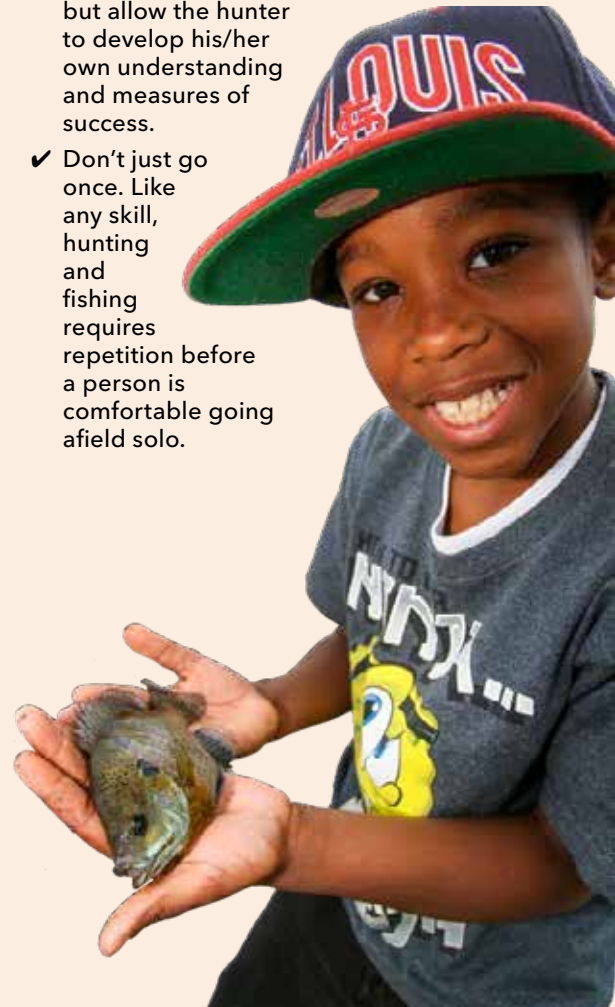
"I have multiple bows and recently got a new one for bowfishing," he said. "This year I harvested a deer with a crossbow, but next year I'd like to harvest with a compound bow. ▲

Lauren Hildreth is the Wildlife Programs supervisor based out of Jefferson City. She enjoys exploring Missouri with her family and dog, Rocky. Adam Doerhoff is a conservation agent in Boone County. He enjoys Missouri's outdoors with his family, especially being a hunting and fishing mentor to his young son.

Becoming an R3 Ambassador

Everyone who enjoys the outdoors benefits from having a stable and active corps of hunters and anglers, and everyone — especially those engaged in consumptive pursuits — can contribute to the R3 effort.

- ➔ Recruit one new hunter, preferably a non-traditional resource user. If each current hunter did this, the problem of decreasing hunters would be solved.
- ➔ If you're a landowner, consider granting permission to someone new to hunt, fish, or trap. Doing so can be beneficial to both the resource user and the landowner. Work together to accomplish goals. If you aren't a landowner, develop relationships with a landowner to earn permission and opportunities.
- ➔ Attend Discover Nature clinics and access the many online and print tools MDC offers to help you stay plugged into the outdoors. Share this knowledge, seek opportunities, and share with others.
- ➔ Being a mentor to a new youth or adult hunter or angler is a sure way to help them make the transition from student to practitioner. A few simple steps will help a new mentor become a successful mentor:
 - ✓ Be patient and focus on an enjoyable experience.
 - ✓ Share your knowledge, but allow the hunter to develop his/her own understanding and measures of success.
 - ✓ Don't just go once. Like any skill, hunting and fishing requires repetition before a person is comfortable going afield solo.





History Calling

SUCCESSFUL RESTORATION LEADS TO MISSOURI'S FIRST REGULATED ELK HUNT
by Larry Archer | photographs by David Stonner



If it seems too good to be true, it probably is.

That admonition encouraging healthy skepticism churned in the back of Mike Buschjost's mind. The woman who had just called to congratulate him on winning the lottery seemed authentic. She spoke with the authority and knowledge one would expect of a woman in her position, but still, with all the details swirling around in his head, how could he be certain.

"She gave me the information and it wasn't 45 minutes later that I had to call her back just to double check to make sure I heard her right," said Buschjost, a 40-year-old construction manager from St. Thomas. "I didn't have anything in writing, so I thought, 'Shoot, I need to call her back before I spread the word and get too excited.'"

Further in the back of Mike's mind were those guys, the guys on Mike's crew, who would like nothing more than to pull a fast one on the boss.

"We do play a lot of jokes back and forth," he said. "We've got a lot of things going on in construction work, so that's why I made sure to call her. I was like, I want to make sure no one was jacking with me. We've got a long line of practical jokers here on the construction job site."

So, he called, and once again, he was speaking with MDC Director Sara Parker Pauley, who — once again — confirmed that his name was one of four drawn from more than 19,000 applicants seeking a general public permit to participate in Missouri's inaugural elk hunt in October and December.

The Perfect Scenario

Pauley's call to Buschjost in early June came nine years and a month from the date the first elk — six bulls and 28 cows and calves — were reintroduced to Missouri on May 5, 2011, after having been absent from the landscape due to unregulated hunting and habitat loss since 1865. Missouri Conservation Commission Chairman Don Bedell and former Commissioner Chip McGeehan, both of whom had voted in favor of elk reintroduction at a meeting in Kirksville seven months earlier, were among those assisting in the release at Peck Ranch



Mike Buschjost, 40, of St. Thomas, is one of five Missourians to receive a permit to participate in Missouri's first regulated elk hunt.



Conservation Area (CA) in Carter County.

"It was one of the thrills of my life to be able to pull that gate open and see these elk," said Bedell, who's office lobby is adorned with a large photo of three collared bull elk.

The 23,762-acre Peck Ranch CA is at the core of a 346-square-mile elk restoration zone that includes parts of Shannon, Carter, and Reynolds counties.

The commission's vote was unanimous, but not without controversy. Opponents to reintroduction — who had successfully blocked a similar attempt a decade earlier — continued to voice concerns about conflicts with agriculture, and the potential for motor vehicle accidents involving elk.

By quarantining the elk before release and establishing the elk restoration zone in an area with little agriculture or major transportation routes, MDC addressed the concerns to the commission's satisfaction, McGeehan said.

"It was a legitimate concern, but we set up 350,000-plus acres," he said. "It wasn't the perfect habitat, but it was the perfect scenario for what we had."



Missouri's elk were quarantined before being released at Peck Ranch CA in 2011. They were held in an enclosure to aid in the transition before being freed to the open conservation area.

Since the reintroduction of the first elk, much of the skepticism has turned to enthusiasm, McGeehan said.

“Now we have cities fighting over who is the elk capital of Missouri,” he said.

With the addition of more elk in 2012 and 2013, MDC relocated a total of 108 elk from Kentucky to Peck Ranch CA. In the intervening years, the herd has more than doubled and has become a draw for nature watchers who want to catch a glimpse of the massive cervids and hear the bulls’ distinctive fall mating bugle. This draw has been a boon to the local economy, with a 2017 study estimating a \$1.3 million boost to the area economy from visitors taking the elk viewing tours at Peck Ranch and Current River conservation areas in 2016.

“It’s going to have a big economic impact in one of the most depressed economic areas of our state in the rural part of the Ozarks,” Bedell said.

And the addition of an elk hunting season — albeit limited to begin — will increase those economic benefits, especially when it results in keeping Missouri elk hunters, who spend large sums to hunt elk in other states, in Missouri, he said.

“We’re keeping the money at home,” he said. “We’re supporting our local economy, we’re supporting our local Conservation Department, and enabling our department to do things they couldn’t do otherwise.”

Missouri Elk; Missouri Hunters

In addition to the general permits issued to Buschjost and three other Missouri residents, one additional permit was issued to a qualifying landowner with at least 20 acres within the “Landowner Elk Hunting Zone” in a portion of Carter, Reynolds, and Shannon counties. Thirty-three applications were submitted for the landowner permit, which allows the landowner to hunt only on his or her property within the landowner elk hunting zone.

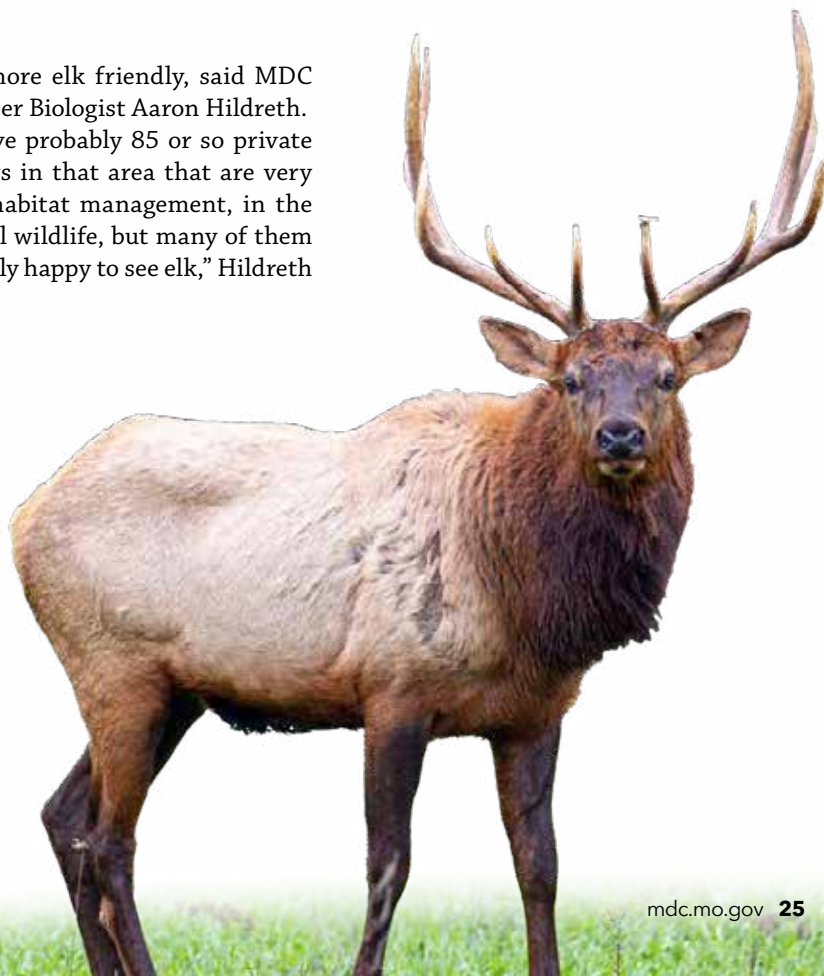
The additional landowner permit was created to acknowledge the 20 percent of the elk restoration zone that is private property and the habitat work many of those landowners have done to make



A great deal of habitat work was done throughout Carter, Shannon, and Reynolds counties, giving the elk the open areas they prefer. Bull elk are known for their size and impressive antlers, which are much larger than the white-tailed deer antlers most Missourians know.

the area more elk friendly, said MDC Elk and Deer Biologist Aaron Hildreth.

“We have probably 85 or so private landowners in that area that are very active in habitat management, in the name of all wildlife, but many of them are certainly happy to see elk,” Hildreth said.



The inaugural elk season will take place in two parts that bookend the majority of the firearms deer hunting season. The first is a nine-day archery portion running Oct. 17–25, followed by a nine-day firearms portion running Dec. 12–20. The five permits will be for bull elk only and will be valid for both portions.

The permit drawings were limited to one application per-person, per-year with a 10-year “sit-out” period for those drawn for a general permit before they may apply again.

A Growing Herd

Before approving an elk season, the commission set three goals for herd health and sustainability: a minimum of 200 head, an annual growth rate of at least 10 percent, and a herd ratio of at least one bull per four cows. As of June 1, which MDC biologists consider the beginning of the elk biological year, the herd was estimated at 207 head, with a three-year average growth rate of 16 percent. Researchers and wildlife managers use radio collars, calf-cow counts, and aerial surveys to track the herd’s size and movement.

Although the minimum herd size to sustain the population with a limited harvest was 200, the goal remains for the herd to grow to twice that size, Hildreth said.

“Right now, we have a population goal of around 500 elk,” he said. “Conceivably if everything holds true and the population continues to improve as the model predicts, we’ll be in excess of 400 individuals by 2025.”

As the herd grows, so is the likelihood that the annual harvest will grow as well, Hildreth said.

“Right now, we’re only hunting antlered elk so we’re having minimal impact on the reproductive side of the population,” he said. “But as we approach our population goal we’re going to survey the public to get a more current

idea of acceptance trends — how well they like them, where they like them, all that good stuff — but we’re going to move from purely recreational hunting to population management, and a big part of that will be antlerless or cow hunting opportunities.”

A One-on-One Deal

Now that the reality — and the authenticity — of his historic call with the director has set in, Mike Buschjost has begun to think about the hunt ahead.

“I’m going to try to give it all I’ve got those first nine days,” he said. “I feel like that’s more important to me to try to get one killed with a bow. If all else fails, I’ll pull the rifle out, but I’m going to give it full dedication that first nine days of the hunt.

“It means a lot to me to get close to the animals and not shoot them from afar. To me it’s better to get right in their space and make it a one-on-one deal.”

In preparation for October, Buschjost and his sons, ages 13 and 10, headed down to Peck Ranch CA and the surrounding area for a camping and

scouting trip. Which of the two boys — both avid bowhunters who have joined their father on elk hunts out west — will accompany their father this year wasn’t immediately determined.

“We’re going to have to rock, paper, scissors to see who gets to tag along,” Buschjost said.

Whichever of the lucky boys it is, he will join his father and the other permit recipients on a close-to-home adventure other Missouri elk hunters can only dream of — for now. And with the adventure, like with all adventures in the outdoors, will come the stories, McGeehan said.

“I can’t imagine the stories that will be told around Christmas of this year when those four citizens and one landowner get to share the experience that they had in harvesting one of the first elk in the state of Missouri.” ▲

Larry Archer is the associate editor of Missouri Conservationist. He counts seeing Missouri’s elk at Peck Ranch CA as a highlight of his outdoor experiences.



The inaugural modern elk hunting season in Missouri will focus exclusively on bull elk, which will have little effect on the continued growth of the state’s elk herd.

About Elk

Elk (*Cervus elaphus*) are the second-largest cervid in North America. Bull elk (males) in Missouri can weigh more than 700 pounds and cows (females) can weigh more than 550 pounds.

The Missouri Elk Partnership

Restoring a sustainable elk population in Missouri is the result of a federal, state, not-for-profit, and landowner partnership. The Rocky Mountain Elk Foundation funded much of the early effort. Nearly half (49 percent) of the elk restoration zone is held in public trust by MDC, the National Park Service, or the U.S. Forest Service. Another 27 percent is private land maintained by the L-A-D Foundation, which works to maintain the property through sustainable forestry and woodland management, while another 3 percent is protected by the Nature Conservancy. The remaining 20 percent is privately owned.

Habitat work done by the elk partners has ensured that the herd has thrived in the elk restoration zone, said MDC Elk and Deer Biologist Aaron Hildreth.

"While an elk can survive perfectly fine in a heavily, almost closed-canopy, timbered environment, the reality is that they want grassy openings," Hildreth said. "They don't always get them, but because of a lot of the habitat work that was done prior to elk getting here and most certainly because of the monumental amount of work that has been done by government agencies, non-governmental organizations, and private landowners, that really is what has allowed them to be very happy and stay where they are."

Driving Tours

For more on elk driving tours, visit short.mdc.mo.gov/ZJJ.

Meet the Hunters



Hunter: Joe Benthall
Age: 37
Location: Mount Vernon ●
Hunt Experience: 25 years
Hunted Elk Before: No



Hunter: Sam Schultz
Age: 42
Location: Winfield ●
Hunt Experience: 30 years
Hunted Elk Before: Yes



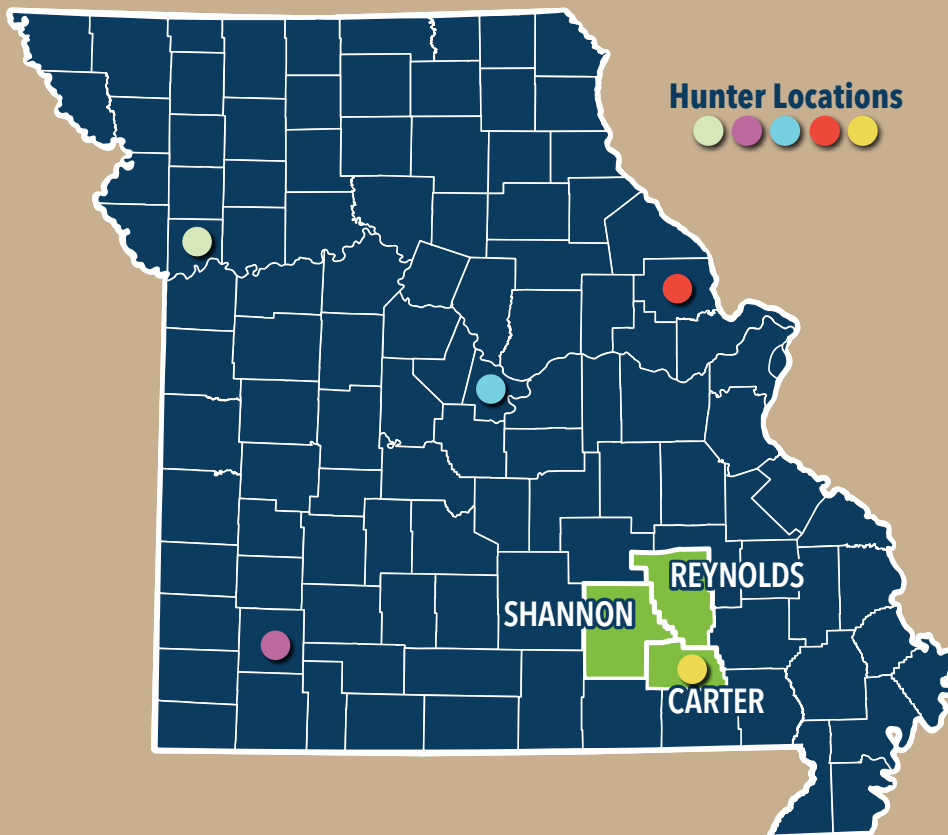
Hunter: Bill Clark
Age: 78
Location: Van Buren ●
Hunt Experience: 50+ years
Hunted Elk Before: Yes



Hunter: Michael Buschjost
Age: 40
Location: St. Thomas ●
Hunt Experience: Most my life
Hunted Elk Before: Yes



Hunter: Gene Guikey
Age: 59
Location: Liberty ●
Hunt Experience: 50 years
Hunted Elk Before: No



Get Outside

in SEPTEMBER →

Ways to connect with nature

Black Gold

Missouri is the world's top producer of black walnuts, which begin ripening in September. The nutmeat is sweet and used in baking and confections. For recipe ideas, visit short.mdc.mo.gov/Z3U.



The Song of the Herd

Elk begin bugling this month. To see Missouri's elk herd, and take in some fall color while there, you can take a self-guided driving tour at Peck Ranch Conservation Area. Plan a trip with details from short.mdc.mo.gov/ZJJ.

Natural Events to See This Month

Here's what's going on in the natural world.



Osage orange fruits ripen



Monarch butterflies begin migrating, sometimes traveling 3,000 miles



Whirligig beetles gyrate endlessly on the water

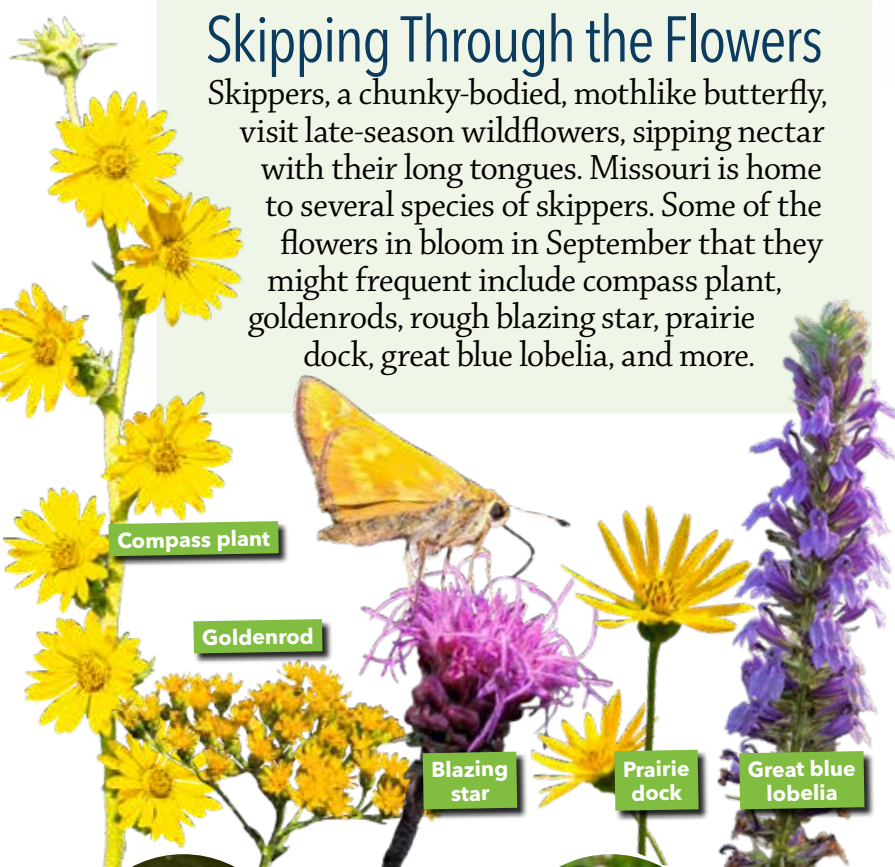


A Brief Visitor

American white pelicans congregate at wetlands from late September through mid-October. These immense birds don't breed in Missouri. Rather, they migrate through in summer and fall. Head out and catch a glimpse while you can.

Skipping Through the Flowers

Skippers, a chunky-bodied, mothlike butterfly, visit late-season wildflowers, sipping nectar with their long tongues. Missouri is home to several species of skippers. Some of the flowers in bloom in September that they might frequent include compass plant, goldenrods, rough blazing star, prairie dock, great blue lobelia, and more.



Compass plant

Goldenrod

Blazing star

Prairie dock

Great blue lobelia



Eastern river cooter eggs hatch



Elephant's foot blooms



PRIORITY GEOGRAPHIES

are key landscapes that hold high potential for conserving our state's diverse habitats and species. Within these areas, MDC biologists, partner organizations, and private landowners work together to make the landscape healthier and more profitable.

Work underway includes:

- ▶ Forest, woodland, and timber improvement
- ▶ Prairie, glade, and wetland restoration
- ▶ River and stream bank stabilization
- ▶ Cave and spring protection
- ▶ Wildlife-friendly grazing practices and improved pollinator habitat
- ▶ Native plant restoration

Enhancing habitat on your land can:

- ▶ Decrease erosion and increase the health of soil
- ▶ Establish safe, reliable drinking water for livestock
- ▶ Provide season-long grazing
- ▶ Increase opportunities for recreation and wildlife viewing
- ▶ Contribute to conservation of Missouri's plants and wildlife



For more information, visit mdc.mo.gov/priority-geographies

Places to Go

NORTHWEST REGION

Bluffwoods Conservation Area

Loess hills provide hiking options

by Larry Archer

✳ In the hills above the Missouri River floodplain south of St. Joseph, a system of trails takes visitors throughout the 2,281-acre Bluffwoods Conservation Area (CA).

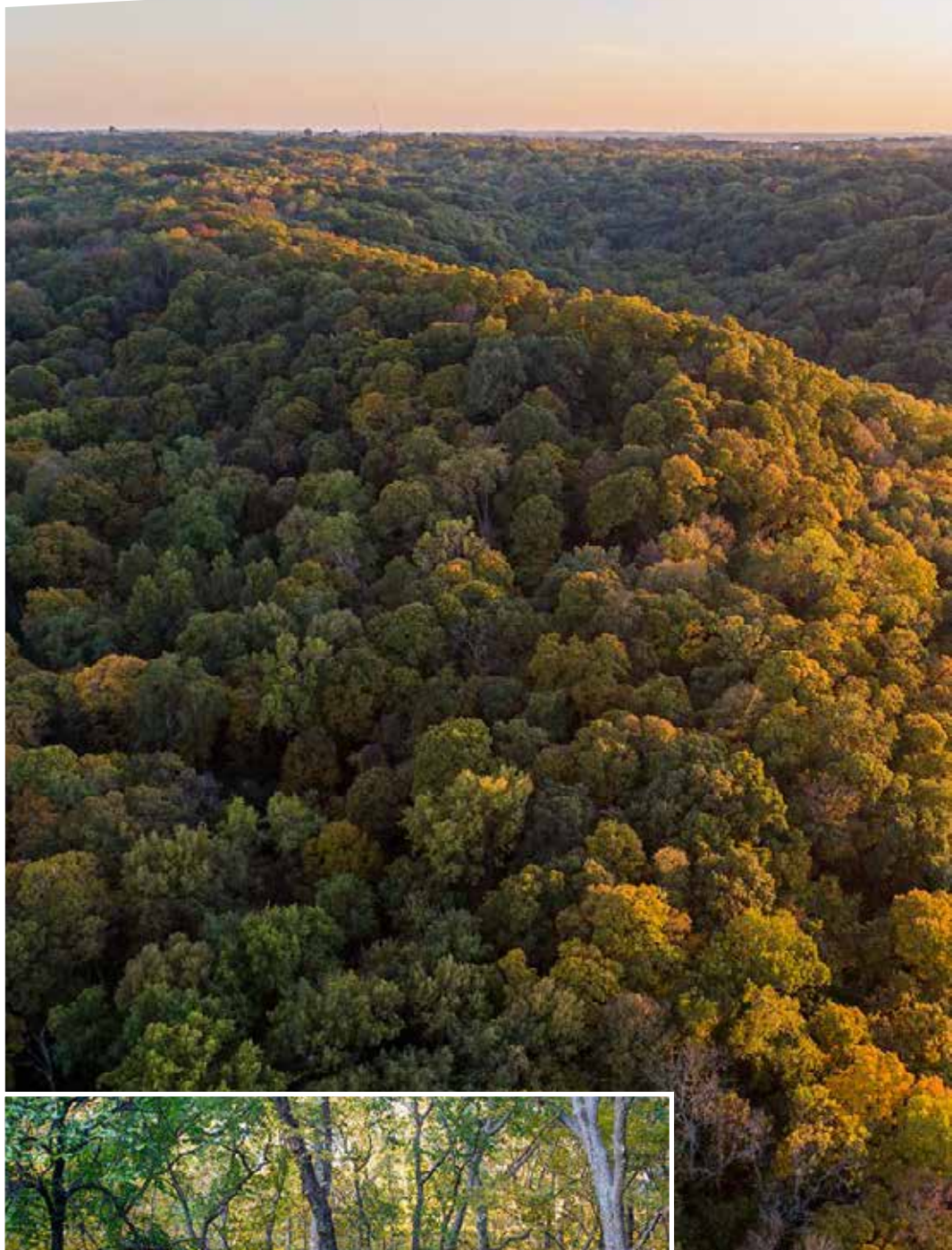
"The area has an extensive trail system and one of the trails is ADA; we usually refer to it as the Forest Nature Trail," said Bluffwoods CA Manager Lonnie Messbarger.

As an ADA-accessible trail, the Forest Nature Trail is paved and relatively level, but the non-paved trails offer more of a challenge, Messbarger said.

"The natural surface trails do have some pretty steep parts of it," he said. "Bluffwoods has some pretty severe terrain because it's right on top of the loess hill mounds that can have 300–400-foot elevation changes pretty quick."

That erodible quality of the area's loess soil gives the area a unique feature not often found in northwest Missouri. In drainage areas, the soil has washed away, exposing the bedrock below and giving the creeks an "Ozarkian" look, he said.

"You just don't see rock waterfalls and rock ripples in a lot of the creeks in this part of the world; they're mostly dirt," he said. "You get some pretty neat features, but you've got to go find them."



Approximately 90 percent of Bluffwoods CA is covered in trees, but a series of trails give visitors access to the interior of the area.

DAVID STONNER



BLUFFWOODS CONSERVATION AREA

consists of 2,281 acres in Buchanan County. From St. Joseph, take Highway 59 south 8 miles, then east on Bethel Road 0.6 mile to area entrance.

39.6372, -94.9314

short.mdc.mo.gov/Z7E 816-271-3100

WHAT TO DO WHEN YOU VISIT



Birdwatching Included in the National Audubon Society's Iatan/Weston River Corridor Important Bird Area (short.mdc.mo.gov/Z7u). Included in the Great Missouri Birding Trail (short.mdc.mo.gov/Z7L). The eBird list of birds recorded at Bluffwoods CA is available at short.mdc.mo.gov/Z7b.



Camping Two designated primitive camping areas.



Hiking Two primitive hiking trails totaling 3 miles; three asphalt hiking trails (two ADA accessible) totaling 1.1 miles; interior service roads suitable for hiking totaling 1.7 miles.



Hunting Deer and turkey

Deer and turkey regulations are subject to annual changes. Please refer to the Spring Turkey or Fall Deer and Turkey booklets for current regulations.

Also **rabbit** and **squirrel**

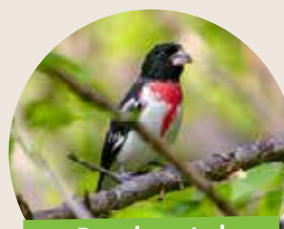
WHAT TO LOOK FOR WHEN YOU VISIT



Gray fox



Bobcat



Rose-breasted
grosbeak



Pawpaw

Wild Guide



White Oak

Quercus alba

Status
Common

Size
to 120 feet

Distribution
Statewide



Did You Know?

Native Americans used ground acorns to make bread and the bark for medicinal purposes. Once used in ship construction, white oak wood is now used for whiskey and wine barrels, general construction, cabinets, and more. In fact, it is second in value to walnut.

With more than 20 species of oaks in Missouri, white oak is the banner species for a large subset of native oaks called “the white oak group.” Other subsets are called “the black oak group” and the “the red oak group.” White oak is one of the most attractive, long-lived shade trees in Missouri, surviving over 300 years. These large trees with long, straight trunks and broad, rounded crowns are found in a wide variety of forests, woodlands, and savanna natural communities throughout the state. The bark is light gray and the leaves are lobed, measuring 5 to 9 inches long.



ECOSYSTEM CONNECTIONS

White oaks produce acorns, which ripen from September through October. Acorns are an important food for blue jays, woodpeckers, wood ducks, wild turkeys, ruffed grouse, northern bobwhites, mice, squirrels, raccoons, and deer. In addition, these large, strong trees provide nesting space for many birds and mammals, and a sturdy structure for vines and other smaller plants to climb on.

Outdoor Calendar

❖ MISSOURI DEPARTMENT OF CONSERVATION ❖

Free MO Hunting and MO Fishing Apps

MO Hunting makes it easy to buy permits, electronically notch them, and Telecheck your harvest. MO Fishing lets you buy permits, find great places to fish, and ID your catch. Get both in Android or iPhone platforms at short.mdc.mo.gov/Zi2.



FISHING

Black Bass

Impounded waters and non-Ozark streams:
Open all year

Most streams south of the Missouri River:

- ▶ Catch-and-Keep:
May 23, 2020–Feb. 28, 2021
- ▶ Catch-and-Release:
Open all year

Bullfrogs, Green Frogs

June 30 at sunset–Oct. 31, 2020

Nongame Fish Gigging

Impounded Waters, sunrise to sunset:
Feb. 16–Sept. 14, 2020

Streams and Impounded Waters,
sunrise to midnight:
Sept. 15, 2020–Feb. 15, 2021

Paddlefish

On the Mississippi River:
Sept. 15–Dec. 15, 2020

Trout Parks

Catch-and-Keep:
March 1–Oct. 31, 2020

Catch-and-Release:
Nov. 13, 2020–Feb. 8, 2021

For complete information about seasons, limits, methods, and restrictions, consult the *Wildlife Code of Missouri* at short.mdc.mo.gov/Zib. Current hunting, trapping, and fishing regulation booklets are available from local permit vendors or online at short.mdc.mo.gov/ZZf.

HUNTING

Bullfrogs, Green Frogs

June 30 at sunset–Oct. 31, 2020

Coyote

Restrictions apply during April, spring turkey season, and firearms deer season.

Open all year

Crow

Nov. 1, 2020–March 3, 2021

Deer

Archery:

Sept. 15–Nov. 13, 2020

Nov. 25, 2020–Jan. 15, 2021

Firearms:

- ▶ Early Youth Portion (ages 6–15):
Oct. 31–Nov. 1, 2020
- ▶ November Portion:
Nov. 14–24, 2020
- ▶ Late Youth Portion (ages 6–15):
Nov. 27–29, 2020
- ▶ Antlerless Portion (open areas only):
Dec. 4–6, 2020
- ▶ Alternative Methods Portion:
Dec. 26, 2020–Jan. 5, 2021

Dove

Sept. 1–Nov. 29, 2020

Elk

Archery:

Oct. 17–25, 2020

Firearms:

Dec. 12–20, 2020

New Elk Hunting Season

MDC will offer Missourians the state's first elk-hunting season in modern history starting this fall. Learn more at short.mdc.mo.gov/Znd.

Groundhog (woodchuck)

May 11–Dec. 15, 2020

Pheasant

Youth (ages 6–15):

Oct. 24–25, 2020

Regular:

Nov. 1, 2020–Jan. 15, 2021



Quail

Youth (ages 6–15):

Oct. 24–25, 2020

Regular:

Nov. 1, 2020–Jan. 15, 2021

Rabbit

Oct. 1, 2020–Feb. 15, 2021

Sora, Virginia Rails

Sept. 1–Nov. 9, 2020

Squirrel

May 23, 2020–Feb. 15, 2021

Teal

Sept. 12–27, 2020

Turkey

Archery:

Sept. 15–Nov. 13, 2020

Nov. 25, 2020–Jan. 15, 2021

Firearms:

- ▶ Fall: Oct. 1–31, 2020

Waterfowl

See the Migratory Bird and Waterfowl Hunting Digest or visit short.mdc.mo.gov/ZZx for more information.

Wilson's (Common) Snipe

Sept. 1–Dec. 16, 2020

Woodcock

Oct. 15–Nov. 28, 2020



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on Instagram**

@moconservation

The red-banded leafhopper, one of more than 3,000 species of leafhoppers, lights up the natural world with its vivid, racing-striped pattern of robin's-egg blue and orange. What breathtaking colors will you discover on your next outdoor adventure?

📷 by **Noppadol Paothong**

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